dSPACE Systems

Solutions for embedded software development in automotive, aerospace, and industrial control

Highlights

- dSPACE products help you manage the complexity of today’s embedded software engineering
- High software quality, efficient processes, high productivity
- Mature and reliable tools based on leading-edge technology and 30 years of experience
- Dedicated support, engineering, and consulting services available worldwide

Embedded Software Development with dSPACE Tools

dSPACE offers a complete and integrated development environment for embedded software and systems. Our hardware and software tools are convenient to use and will save you valuable development time and money, whether you apply them throughout the entire process or only for individual project phases. dSPACE systems support established development and validation processes, also with respect to functional safety requirements, and give you ways to adapt your process chains to new challenging needs. With constant innovations, key technologies and standards, and dedicated service and support, dSPACE helps you achieve long-term success and put your visions into action.

dSPACE systems let you perform demanding tasks, such as:

- Software architecture design
- Rapid prototyping of new, innovative functions
- Automatic production code generation optimized for many embedded targets
- Hardware-in-the-loop (HIL) testing of single and networked embedded control units
- Virtual validation of functions and embedded software with PC-based simulation, and
- Data management for handling the ever increasing number of models, data, tests, variants, dependencies etc., whether in small or large teams and departments.

Therefore, dSPACE tools give you the competitive edge you need to keep pace with strong market demands.
dSPACE Product Areas (1)

Software Architecture
Develop complex software architectures and generate virtual ECUs for validation

Relevant products:
- SystemDesk (p. 44)
- TargetLink (p. 208)
- VEOS (p. 116)

Rapid Prototyping
Develop and optimize control, perception, or sensor fusion algorithms and capture data with high-performance prototyping systems

Relevant products:
- MicroAutoBox Hardware (p. 336), including MicroAutoBox Embedded PC (p. 354), (NEW) MicroAutoBox Embedded SPU (Sensor Processing Unit)$^1$ (p. 358), and (NEW) MicroAutoBox Embedded DSU (Data Storage Unit)$^2$ (p. 362)
- MicroLabBox (p. 328)
- SCALEXIO Hardware (p. 405)
- PHS Hardware (p. 480)
- Further hardware products, e.g., RapidPro Hardware (p. 366), DS1104 (p. 320), ECU Interface Hardware (p. 390)
- Implementation Software (p. 53), including Bus Manager (p. 60), RTMaps (p. 100)
- ControlDesk (p. 122)
- Further software products, e.g., ECU Interface Software (p. 252), TargetLink (p. 208)

Virtual Validation (MIL/SIL Simulation and Testing)
Frontload integration, validation, and verification steps with virtual ECUs and PC-based simulation

Relevant products:
- VEOS (p. 116)
- TargetLink (p. 208)
- SystemDesk (p. 44)
- ControlDesk (p. 122)

Production Code Generation
Generate and verify production code for the highest demands with the TargetLink Ecosystem for model-based software development

Relevant products:
- TargetLink (p. 208)
- TargetLink Ecosystem (p. 244)
- Model Compare (p. 246)
- VEOS (p. 116)
- SYNECT (p. 294)

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$^1$ MicroAutoBox Embedded SPU is still under development and all related information is subject to change without notice.

$^2$ MicroAutoBox Embedded DSU is still under development and all related information is subject to change without notice.
dSPACE Product Areas (2)

**HIL Testing**
Exploit the full range of hardware-in-the-loop (HIL) testing systems from early function testing to extensive ECU network testing

Relevant products:
- SCALEXIO Hardware (p. 405)
- PHS Hardware (p. 480)
- Experiment and Visualization Software (p. 122)
- Test Automation Software (p. 174)
- Automotive Simulation Models (p. 258)
- Implementation Software (p. 53)
- SYNECT (p. 294)
- Turn-key HIL simulators, e.g., [NEW] for radar-in-the-loop (p. 634), and electric drive testing

**Mechatronic Test Benches**
Test your mechatronic components and systems on highly dynamic turn-key test benches

Relevant products:
- Customized Mechatronic Test Benches (p. 648)

**Data Management**
Keep your development data consistent and traceable with a data management tool suite optimized for embedded software and ECU projects

Relevant products:
- SYNECT (p. 294)

**Engineering**
Get fast and competent assistance and tailored engineering solutions for your embedded software development projects

Relevant services:
- dSPACE Engineering Services (p. 656)

**Process Consulting**
Optimize your development processes and comply with standards with the aid of experienced dSPACE process consultants

Relevant services:
- NEW: dSPACE Process Consulting (p. 662)